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RAW SEQUENCE LISTING              DATE: 06/03/2002
PATENT APPLICATION:  US/10/041,977   TIME: 10:31:39

Input Set : N:\Crf3\RULE60\10041977.raw
Output Set: N:\CRF3\06032002\J041977.raw
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SEQUENCE LISTING

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 3 (1) GENERAL INFORMATION:
 5       (i) APPLICANT: Nicolette, Charles A.
 7      (ii) TITLE OF INVENTION: A METHOD FOR IDENTIFYING CYTOTOXIC
 8                               T-CELL EPITOPES
10     (iii) NUMBER OF SEQUENCES: 11
12      (iv) CORRESPONDENCE ADDRESS:
13           (A) ADDRESSEE: GENZYME CORPORATION
14           (B) STREET: One Mountain Road
15           (C) CITY: Framingham
16           (D) STATE: Massachusetts
17           (E) COUNTRY: USA
18           (F) ZIP: 01701
20       (v) COMPUTER READABLE FORM:
21           (A) MEDIUM TYPE: Floppy disk
22           (B) COMPUTER: IBM PC compatible
23           (C) OPERATING SYSTEM: PC-DOS/MS-DOS
24           (D) SOFTWARE: PatentIn Release #1.0, Version #1.30
26      (vi) CURRENT APPLICATION DATA:
C--> 27          (A) APPLICATION NUMBER: US/10/041,977
C--> 28          (B) FILING DATE: 09-Jan-2002
29           (C) CLASSIFICATION:
32     (vii) PRIOR APPLICATION DATA:
33           (A) APPLICATION NUMBER: US/08/989,195
34           (B) FILING DATE:
37    (viii) ATTORNEY/AGENT INFORMATION:
38           (A) NAME: Dugan, Deborah A.
39           (B) REGISTRATION NUMBER: 37,315
40           (C) REFERENCE/DOCKET NUMBER: GZ0106US
42      (ix) TELECOMMUNICATION INFORMATION:
43           (A) TELEPHONE: (508) 872-8400
44           (B) TELEFAX: (508) 872-5415
47 (2) INFORMATION FOR SEQ ID NO: 1:
49       (i) SEQUENCE CHARACTERISTICS:
50           (A) LENGTH: 8 amino acids
51           (B) TYPE: amino acid
52           (C) STRANDEDNESS: single
53           (D) TOPOLOGY: linear
55      (ii) MOLECULE TYPE: peptide
57     (iii) HYPOTHETICAL: NO
62      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
W--> 64      Leu Xaa Xaa Xaa Xaa Xaa Xaa Val
65           1               5
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                Input Set : N:\Crf3\RULE60\10041977.raw
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 67  (2) INFORMATION FOR SEQ ID NO: 2:
 69       (i) SEQUENCE CHARACTERISTICS:
 70           (A) LENGTH: 8 amino acids
 71           (B) TYPE: amino acid
 72           (C) STRANDEDNESS: single
 73           (D) TOPOLOGY: linear
 75      (ii) MOLECULE TYPE: peptide
 77     (iii) HYPOTHETICAL: NO
 80      (ix) FEATURE:
 81           (A) NAME/KEY: Region
 82           (B) LOCATION: 8
 83           (D) OTHER INFORMATION: /product= "OTHER"
 84 /note= "Xaa at Position 8 is a positively charged residue"
 87      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:
W--> 89      Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 90           1               5
 92  (2) INFORMATION FOR SEQ ID NO: 3:
 94       (i) SEQUENCE CHARACTERISTICS:
 95           (A) LENGTH: 9 amino acids
 96           (B) TYPE: amino acid
 97           (C) STRANDEDNESS: single
 98           (D) TOPOLOGY: linear
100      (ii) MOLECULE TYPE: peptide
102     (iii) HYPOTHETICAL: NO
105      (ix) FEATURE:
106           (A) NAME/KEY: Region
107           (B) LOCATION: 2
108           (D) OTHER INFORMATION: /product= "OTHER"
109 /note= "Xaa at Position 2 is Glu or Asp"
111      (ix) FEATURE:
112           (A) NAME/KEY: Region
113           (B) LOCATION: 9
114           (D) OTHER INFORMATION: /product= "OTHER"
115 /note= "Xaa at Position 9 is Phe, Lys, or Tyr"
118      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:
W--> 120     Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
121           1               5
123  (2) INFORMATION FOR SEQ ID NO: 4:
125       (i) SEQUENCE CHARACTERISTICS:
126           (A) LENGTH: 8 amino acids
127           (B) TYPE: amino acid
128           (C) STRANDEDNESS: single
129           (D) TOPOLOGY: linear
131      (ii) MOLECULE TYPE: peptide
133     (iii) HYPOTHETICAL: NO
138      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:
W--> 140     Arg Xaa Xaa Xaa Xaa Xaa Xaa Leu
141           1               5
143  (2) INFORMATION FOR SEQ ID NO: 5:
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/041,977

DATE: 06/03/2002
TIME: 10:31:39

Input Set : N:\Crf3\RULE60\10041977.raw
Output Set: N:\CRF3\06032002\J041977.raw

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145       (i) SEQUENCE CHARACTERISTICS:
146            (A) LENGTH: 8 amino acids
147            (B) TYPE: amino acid
148            (C) STRANDEDNESS: single
149            (D) TOPOLOGY: linear
151      (ii) MOLECULE TYPE: peptide
153     (iii) HYPOTHETICAL: NO
156      (ix) FEATURE:
157            (A) NAME/KEY: Region
158            (B) LOCATION: 2
159            (D) OTHER INFORMATION: /product= "OTHER"
160 /note= "Xaa at Position 2 is Lys or Arg"
162      (ix) FEATURE:
163            (A) NAME/KEY: Region
164            (B) LOCATION: 8
165            (D) OTHER INFORMATION: /product= "OTHER"
166 /note= "Xaa at Position 8 is Leu or Ile"
169      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:
W--> 171      Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
172           1                   5
174 (2) INFORMATION FOR SEQ ID NO: 6:
176       (i) SEQUENCE CHARACTERISTICS:
177            (A) LENGTH: 8 amino acids
178            (B) TYPE: amino acid
179            (C) STRANDEDNESS: single
180            (D) TOPOLOGY: linear
182      (ii) MOLECULE TYPE: peptide
184     (iii) HYPOTHETICAL: NO
187      (ix) FEATURE:
188            (A) NAME/KEY: Region
189            (B) LOCATION: 1
190            (D) OTHER INFORMATION: /product= "OTHER"
191 /note= "Xaa at Position 1 is Met or Leu"
194      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:
W--> 196      Xaa Xaa Xaa Xaa Xaa Xaa Xaa Lys
197           1                   5
199 (2) INFORMATION FOR SEQ ID NO: 7:
201       (i) SEQUENCE CHARACTERISTICS:
202            (A) LENGTH: 8 amino acids
203            (B) TYPE: amino acid
204            (C) STRANDEDNESS: single
205            (D) TOPOLOGY: linear
207      (ii) MOLECULE TYPE: peptide
209     (iii) HYPOTHETICAL: NO
212      (ix) FEATURE:
213            (A) NAME/KEY: Region
214            (B) LOCATION: 8
215            (D) OTHER INFORMATION: /product= "OTHER"
216 /note= "Xaa at Position 8 is Phe or Tyr"
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                    RAW SEQUENCE LISTING              DATE: 06/03/2002
                    PATENT APPLICATION:  US/10/041,977    TIME: 10:31:39

                    Input Set : N:\Crf3\RULE60\10041977.raw
                    Output Set: N:\CRF3\06032002\J041977.raw


     219        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:
W--> 221        Glu Xaa Xaa Xaa Xaa Xaa Xaa Xaa
     222        1                   5
     224 (2) INFORMATION FOR SEQ ID NO: 8:
     226        (i) SEQUENCE CHARACTERISTICS:
     227              (A) LENGTH: 8 amino acids
     228              (B) TYPE: amino acid
     229              (C) STRANDEDNESS: single
     230              (D) TOPOLOGY: linear
     232       (ii) MOLECULE TYPE: peptide
     234      (iii) HYPOTHETICAL: NO
     237       (ix) FEATURE:
     238              (A) NAME/KEY: Region
     239              (B) LOCATION: 8
     240              (D) OTHER INFORMATION: /product= "OTHER"
     241 /note= "Xaa at Position 8 is Phe, His, Trp, or Tyr"
     244        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:
W--> 246        Xaa Pro Xaa Xaa Xaa Xaa Xaa Xaa
     247        1                   5
     249 (2) INFORMATION FOR SEQ ID NO: 9:
     251        (i) SEQUENCE CHARACTERISTICS:
     252              (A) LENGTH: 7 amino acids
     253              (B) TYPE: amino acid
     254              (C) STRANDEDNESS: single
     255              (D) TOPOLOGY: linear
     257       (ii) MOLECULE TYPE: peptide
     259      (iii) HYPOTHETICAL: NO
     262       (ix) FEATURE:
     263              (A) NAME/KEY: Region
     264              (B) LOCATION: 1
     265              (D) OTHER INFORMATION: /product= "OTHER"
     266 /note= "Xaa at Position 1 is Ile or Leu"
     268       (ix) FEATURE:
     269              (A) NAME/KEY: Region
     270              (B) LOCATION: 7
     271              (D) OTHER INFORMATION: /product= "OTHER"
     272 /note= "Xaa at Position 7 is His or Lys"
     275        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:
W--> 277        Xaa Xaa Xaa Xaa Xaa Xaa Xaa
     278        1                   5
     280 (2) INFORMATION FOR SEQ ID NO: 10:
     282        (i) SEQUENCE CHARACTERISTICS:
     283              (A) LENGTH: 8 amino acids
     284              (B) TYPE: amino acid
     285              (C) STRANDEDNESS: single
     286              (D) TOPOLOGY: linear
     288       (ii) MOLECULE TYPE: peptide
     290      (iii) HYPOTHETICAL: NO
     295        (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:
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297      Tyr Leu Lys Asp Gln Gln Leu Leu
298       1               5
300 (2) INFORMATION FOR SEQ ID NO: 11:
302      (i) SEQUENCE CHARACTERISTICS:
303              (A) LENGTH: 8 amino acids
304              (B) TYPE: amino acid
305              (C) STRANDEDNESS: single
306              (D) TOPOLOGY: linear
308      (ii) MOLECULE TYPE: peptide
310     (iii) HYPOTHETICAL: NO
313      (ix) FEATURE:
314              (A) NAME/KEY: Region
315              (B) LOCATION: 1
316              (D) OTHER INFORMATION: /product= "OTHER"
317 /note= "Xaa at Position 1 is Gly, Ser, Thr, Cys, Tyr, Asn, or
318 Gln"
320      (ix) FEATURE:
321              (A) NAME/KEY: Region
322              (B) LOCATION: 2
323              (D) OTHER INFORMATION: /product= "OTHER"
324 /note= "Xaa at Position 2 is Ala, Val, Leu, Ile, Pro, Phe, Trp,
325 or Met"
327      (ix) FEATURE:
328              (A) NAME/KEY: Region
329              (B) LOCATION: 4
330              (D) OTHER INFORMATION: /product= "OTHER"
331 /note= "Xaa at Position 4 is Asp or Glu"
333      (ix) FEATURE:
334              (A) NAME/KEY: Region
335              (B) LOCATION: 5
336              (D) OTHER INFORMATION: /product= "OTHER"
337 /note= "Xaa at Position 5 is Gly, Ser, Thr, Cys, Tyr, Asn, or
338 Gln"
340      (ix) FEATURE:
341              (A) NAME/KEY: Region
342              (B) LOCATION: 6
343              (D) OTHER INFORMATION: /product= "OTHER"
344 /note= "Xaa at Position 6 is Gly, Ser, Thr, Cys, Tyr, Asn, or
345 Gln"
347      (ix) FEATURE:
348              (A) NAME/KEY: Region
349              (B) LOCATION: 7
350              (D) OTHER INFORMATION: /product= "OTHER"
351 /note= "Xaa at Position 7 is Ala, Val, Leu, Ile, Pro, Phe, Trp,
352 or Met"
355      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:
W--> 357     Xaa Xaa Lys Xaa Xaa Xaa Xaa Leu
358       1               5
```

RAW SEQUENCE LISTING ERROR SUMMARY   DATE: 06/03/2002
PATENT APPLICATION: US/10/041,977   TIME: 10:31:40

Input Set : N:\Crf3\RULE60\10041977.raw
Output Set: N:\CRF3\06032002\J041977.raw

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220>
to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; Xaa Pos.2,3,4,5,6,7
Seq#:2; Xaa Pos.2,3,4,5,6,7,8
Seq#:3; Xaa Pos.1,2,3,4,5,6,7,8,9
Seq#:4; Xaa Pos.2,3,4,5,6,7
Seq#:5; Xaa Pos.1,2,3,4,5,6,7,8
Seq#:6; Xaa Pos.1,2,3,4,5,6,7
Seq#:7; Xaa Pos.2,3,4,5,6,7,8
Seq#:8; Xaa Pos.1,3,4,5,6,7,8
Seq#:9; Xaa Pos.1,2,3,4,5,6,7
Seq#:11; Xaa Pos.1,2,4,5,6,7

VERIFICATION SUMMARY
PATENT APPLICATION: US/10/041,977

DATE: 06/03/2002
TIME: 10:31:40

Input Set : N:\Crf3\RULE60\10041977.raw
Output Set: N:\CRF3\06032002\J041977.raw

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L:27 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]
L:28 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]
L:64 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0
L:89 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0
L:120 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:0
L:140 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:0
L:171 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:0
L:196 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:0
L:221 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:0
L:246 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:0
L:277 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:0
L:357 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:0
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file://C:\CRF3\Outhold\VsrJ041977.htm

6/3/02